

May 14, 2012

Blue Flame Energy Corporation 14N679 Route 25, Suite C East Dundee, IL 60118

ATTENTION: Mr. Lawrence Buettner

SUBJECT: Overview of Potential Natural Gas

In the Big Sandy Field Area in the

Appalachian Basin

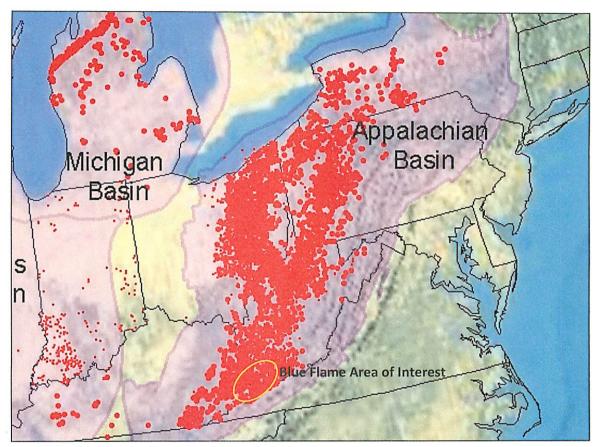
Job 12.1403

At the request of Blue Flame Energy Corporation (Blue Flame), Wright & Company, Inc. (Wright) has conducted a brief review to describe potential for the Big Sandy Field area which is located in various states. The information was obtained in part from published government and industry sources and review of certain well file data. The information reviewed is considered to be reliable, but no opinion is expressed by Wright as to its accuracy. All interpretations, opinions, and recommendations made are based on Wright's experience and knowledge, and no warranty is either expressed or implied. Wright recommends that a thorough independent review of any specific properties, wells, fields, formations and oil and gas operations in general be conducted before any purchases or investments in this area. This overview was prepared for exclusive use by Blue Flame and should be considered in its entirety and should not be used or distributed for any purpose without the prior knowledge of and consent by an officer of Wright.

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Introduction

This letter is intended to provide a brief overview of the Appalachian Basin (Figure 1) with emphasis on the Big Sandy Field located in parts of Kentucky, West Virginia, and Virginia. It is the understanding of Wright that Blue Flame holds certain acreage within the depicted area of interest in the Big Sandy Field area.



Source: http://www.eia.gov/oil_gas/rpd/conventional_gas.pdf

Figure 1: Appalachian Basin

Appalachian Basin

After nearly 200 years since the first gas well was drilled in New York, the Appalachian Basin remains an important part of the domestic industry, and over 200,000 oil and gas wells are believed to have been productive. Rig activity has remained relatively steady through many decades despite price fluctuations of hydrocarbon sales. While the vast majority of wells drilled to date have been to the shallow, low-risk, blanket-type pay zones, recent advances in horizontal drilling and completion techniques have created more opportunities for exploitation within the basin, notably the Marcellus and Utica shales. Historically, factors contributing to the continued success in the basin include, but are not limited to:

- 1. <u>Success Rate</u> Several thick and continuous "blanket" formations extend through large portions of the basin and are considered productive. Successful completion rate basin-wide is reported to be over 90 percent.
- 2. <u>Geologic Diversity</u> To date, production has been reported from over 100 stratigraphically discreet intervals and over 1,000 named fields. Most wells have multiple target pay zones.

- 3. <u>Proximity to Eastern Population Centers</u> Gas prices generally enjoy a premium partly due to lower transport fees.
- 4. <u>Depth</u> As mentioned, the vast majority of production is at very shallow depths (less than 6,000 feet), requiring short drilling times and subsequent lower costs.
- 5. <u>Premium Pricing Most Appalachian Basin gas has a high heating value measured in British thermal units (Btu), thus boosting unit price for the commodity.</u>
- 6. <u>Horizontal Drilling</u> Significant technical improvements have made this technique economically competitive with vertical drilling, widespread, and cost-efficient nationwide. The low-permeability reservoirs typical to the Appalachian Basin are excellent candidates for horizontal drilling.

While oil still plays an important part in the basin, for years the main target has been natural gas. Cumulative production (since 1821) has been estimated to be over 40 trillion cubic feet (Tcf). Documented estimates of probable, possible, and speculative resources vary anywhere from 25 to over 500 Tcf.

Big Sandy Field Area

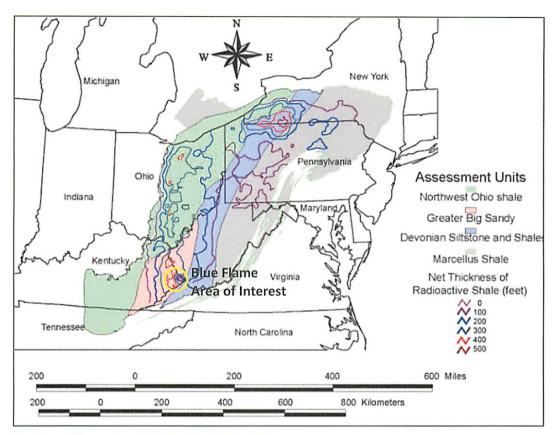
Gas was first discovered and produced in the Big Sandy area of southeastern Kentucky, western West Virginia, and western Virginia in the early 20th century. As is typical for the Appalachian Basin, the blanket nature of the pay zones have led over time to several smaller fields being extended by drilling and subsequently growing together to the point where the area is mostly referred to as the "Greater Big Sandy Area" (Figure 2). The field is listed in the U.S. Energy Information Administration's (EIA) Top 100 gas fields by size.



Source: http://www.blueflameenergy.com/ Figure 2: Greater Big Sandy Area Mr. Lawrence Buettner Blue Flame Energy Corporation May 14, 2012 Page 4

The Greater Big Sandy Area has multiple pay zones, including (from top down) the Salt Sand, Maxon Sand, Little Lime, Big Lime, Big Injun, Cleveland and Berea Sands, and Devonian Shale. Early drilling targeted the Corniferous unconformity, but very quickly the Devonian Shale became the main target. The Devonian Shale, in this area known as the Huron members of the Ohio Shale, is a thick, areally extensive, black, organic-rich shale and shale/silt/sand sequence found in a large majority of the wells. The formation serves as the source, reservoir, and trap rock. Localized fracturing and faulting enable gas to migrate into the other formations listed above. Early drilling targeted these other formations, but it was soon recognized that the shale itself is a profitable target due to natural fracturing. The natural fracturing varies from location to location, enabling relatively prolific producers throughout the field. Wells in the area are characteristically long lived with productive lives of 30 to 50 years or longer. It is not uncommon for individual wells to produce over 500 million standard cubic feet (MMcf) during their lifetime, and some wells have produced in excess of 1 billion cubic feet (Bcf) of natural gas. To date, over 7,000 producing wells have reportedly been drilled in the field. The field covers more than 1,500,000 acres in 11 counties of Kentucky, West Virginia, and Virginia. The center of the field is Pike County, Kentucky, and the total field production in 2009 was over 70 Bcf, according to EIA. A typical Big Sandy Field well will spud and drill quickly on air through the Devonian Shale unless prolific gas is hit in the shallower zones such as the Maxon or Big Lime. In these circumstances drilling may stop and the well is placed directly into production. This sets up the opportunity for later "twinning" (drilling a near offset to the Devonian), or "drill-deepening," which is to deepen the well to the Devonian after the upper zone has depleted. If a productive shallow zone is not found, the chances are high that a Devonian completion can be made. Listed below are several other factors contributing to the continued success of the Greater Big Sandy Area.

- 1. Improved stimulation techniques. A high percentage of wells are fracture stimulated; fracture technology is constantly evolving. Fracturing has evolved from nitroglycerin "shooting" to water, foam, and even pure nitrogen or CO₂ fluids.
- 2. **Horizontal drilling, especially into the Devonian Shale.** Numerous operators have drilled successful horizontal wells into the Lower Huron, Cleveland, Big Lime, and Berea formations; additional zones are probable in the future.
- 3. Field extensions/infill drilling. Typical in a large field, the outer limits are constantly extended and locations are also made available by more aggressive leasing and farm-out arrangements.
- 4. Re-drills, replacement wells, twin wells.
- 5. **Pipeline development.** In some cases, the constantly expanding boundaries of the field get ahead of pipeline access. As new lines are installed, acreage is re-evaluated and new locations sometimes emerge.
- 6. **Deep exploration.** Sediments exist in the area to possibly encourage deeper exploration in the future.
- 7. **Multi-zone completions.** Vertical wells with multiple stacked reservoirs are routinely encountered within the field.



Source: ftp://ftp.eia.doe.gov/natgas/usshaleplays.pdf

Figure 3: Interpretive map showing Devonian Shale gas "fairway" and adjacent area of moderate potential.

According to Blue Flame, they have continued to drill and complete vertical wells in the Greater Big Sandy Area for over 19 years and currently operate 215 wells. Wright has not independently evaluated these wells. Blue Flame's experience may be extremely important in the current challenging gas pricing environment.

In summary, it is Wright's opinion that any acreage position held by Blue Flame in Pike County, Kentucky could be situated for successful infill development along with step-out drilling within the Greater Big Sandy Area. Results typical of historical Big Sandy development may reasonably be expected. While each proposed drilling location was not examined in detail by Wright, production from the various reservoirs, especially the Devonian Shale, are likely to exist in several directions around the Blue Flame acreage holdings. The history of the area indicates that drilling certain locations should be expected to result in mostly gas completions. Of course, the economics of drilling and completing any given oil and gas well will change from month to month, and even day to day, due to the dynamics of the industry.

For purposes of this review, it should be noted that Wright offers no opinion at this time to the potential estimated ultimate recovery (EUR) of any proposed location that may be developed by Blue Flame on their acreage. There are significant uncertainties inherent in estimating reserves, Mr. Lawrence Buettner Blue Flame Energy Corporation May 14, 2012 Page 6

future rates of production, and the timing and amount of future costs. The estimation of reserves must be recognized as a subjective process that cannot be measured in an exact way. The accuracy of any reserves estimate is a function of the quantity and quality of available data and of subjective interpretations and judgments. It should be emphasized that actual production data subsequent to the date of any estimates or changes in the analogous properties may warrant revisions of such estimates. Accordingly, reserves estimates are often different from the quantities of oil and gas that are ultimately recovered.

It has been a pleasure to serve you by preparing this evaluation. All related data will be retained in our files and are available for your review.

Very truly yours,

Wright & Company, Inc.

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<u>References</u>

- 1) <u>U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves, 2009.</u> U.S. Energy Information Administration Website (www.eia.gov).
- 2) Blue Flame well files, logs, and personal correspondence.
- 3) <u>The Atlas of Major Appalachian Gas Plays.</u> Published by the West Virginia Geological and Economic Survey, Mount Chateau Research Center, Morgantown, WV. 1996.
- 4) <u>Oil and Gas Production Data.</u> Commonwealth of Kentucky, Division of Oil and Gas Conservation, Oil and Gas Technical Library (www.dogc.ky.gov).
- 5) <u>CO₂ / Sand Fracturing in Devonian Shales.</u> Paper SPE 26925-MS. By A.B. Yost, R.L. Mazza, and J.B. Gehr. Society of Petroleum Engineers.